

APPENDIX B
VERSION WITH MARKINGS TO SHOW CHANGES MADE
37 C.F.R. § 1.121(b)(iii) AND (c)(ii)

SPECIFICATION:

Paragraph at page 8, lines 3-5:

A color separation filter, such as an unshown mosaic filter, is arranged on the imaging surface (a photosensitive surface) of the CCD 26, performing color separation on a per pixel basis.

Paragraph at page 10, lines 7-20:

FIG. 2 shows the construction of an electrical system of the endoscope apparatus having the endoscope 2A, for example. The DSP board 30 includes a DSP 32 having (a CCD drive function and) a signal processing function. In the DSP 32, as shown in FIG. [3. A] 3, a CCD drive & TG circuit 34 generates a CCD drive signal and a timing signal (simply referred to as TG) in synchronization with a timing signal of a system signal generator circuit (simply referred to as an SSG circuit) 33 in the DSP 32. The CCD drive signal and the timing signal are fed to a delay line delay circuit (simply referred to as DL delay circuit) 35, and are adjusted by the DL delay circuit 35 in timing corresponding to the cable length (signal line length) in accordance with a delay amount setting signal coming from a DSP controlling microcomputer (simply referred to as DSP controlling computer) 36.

Paragraph at page 10, lines 21-24:

The DSP controlling computer 36 is connected to a DIP switch 37, for instance, and outputs, to the DL delay circuit 35, a corresponding delay amount setting signal of a plurality of bits in response to a combination of ON/OFF settings of the DIP switch 37.

Paragraph at page 21, lines 18-23:

Specifically, the gain setting circuit 71 includes [a] gain setting potentiometers 75r and 76r for setting gains for the color signals of R and B with the G color signal set as a reference,

and gain setting potentiometers 75b and 76b for setting gains for the color signals of R and B for setting the white balance in the xenon lamp 21B.

Paragraph at page 26, line 23 to page 27, line 3:

Left and right angle wires 85l and 85r (see FIG. 11) arranged on the left and the right, [in perpendicular to] arranged 90 degrees away from the angle wires 85u and 85d within the insert section 11A are entrained about a pulley 86b within the control section 12 and the pulley 86b is connected a left and right bending motor 87b.

Paragraph at page 27, lines 7-16:

The DSP controlling computer 36 is connected to an upward and downward bend direction control knob 89a and a left and right bend direction control knob 89b. By tilting the bend direction control knobs 89a or 89b, [an] a command signal responsive to the command direction is input to the DSP controlling computer 36. The DSP controlling computer 36 outputs, to the motor driver 88, a control signal responsive to the commanded direction to cause the motor 87a or 87b to rotate. One of the angle wires 85u, 85d, 85l, and 85r is thus pulled, and the bending portion 82 is bent toward the angle wire 85k (k=u, d, l, and r).

Paragraph at page 27, lines 17-20:

With this arrangement, the bending portion 82 [is] can be bent toward a desired direction with only a light force [involved] because of motorized driving, compared with a manual bending operation in which the angle wire 85k is pulled by hand.

Paragraph at page 33, line 16 to page 34, line 2:

In the endoscope 2B shown in FIG. 13, a digital luminance signal Y and digital color signals C (color-difference signals U and V) output by a digital input and output controller 47a in the DSP 32 in the DSP board 30 of the endoscope 2A shown in FIG. 11 are temporarily stored in a frame memory 97 in the function adjustment/expansion circuit board 31", then read from the frame memory 97 with a standard video period, and converted into an analog luminance signal Y

and analog color signals C by a D/A converter 98. The analog luminance signal Y and [analogy] analog color signals C are then converted by an RGB encoder 99 into an RGB signal, which is then output through a video output terminal 16.

CLAIMS:

AMENDED 4. [An endoscope apparatus according to one of Claims 1 and 2,] An endoscope apparatus comprising:

a general-purpose video processing circuit having a drive signal generation function for driving a solid-state image pick-up device built into an endoscope and a signal processing function for outputting a standard video signal by processing an output signal from the solid-state image pickup device; and

an endoscopic function adjusting circuit comprising a function modifying circuit, connected to the general-purpose video processing circuit, for modifying at least one of the drive signal processing function and the signal processing function executed by the general-purpose video signal processing circuit in accordance with the endoscope having the solid-state image pickup device therein;

wherein the endoscopic function [adjustment] adjusting circuit comprises a delay amount adjusting circuit for canceling the effect of a signal delay taking place in a signal cable connecting the solid-state image pickup device to the signal processing circuit.

AMENDED 5. [An endoscope apparatus according to one of Claims 1 and 2,] An endoscope apparatus comprising:

a general-purpose video processing circuit having a drive signal generation function for driving a solid-state image pick-up device built into an endoscope and a signal processing function for outputting a standard video signal by processing an output signal from the solid-state image pickup device; and

an endoscopic function adjusting circuit comprising a function modifying circuit, connected to the general-purpose video processing circuit, for modifying at least one of the drive signal processing function and the signal processing function executed by the general-purpose

video signal processing circuit in accordance with the endoscope having the solid-state image pickup device therein;

wherein the endoscope is detachably connected to a light source, and the endoscopic function adjusting circuit comprises at least a white balance adjusting circuit for [setting a white balance state in view of] detecting ID information indicative of the wavelength distribution of light emitted by a lamp built [in] into the light source, and automatically setting a white balance state in view of said ID information.

AMENDED 6. [An endoscope apparatus according to one of Claims 1 and 2,] An endoscope apparatus comprising:

a general-purpose video processing circuit having a drive signal generation function for driving a solid-state image pick-up device built into an endoscope and a signal processing function for outputting a standard video signal by processing an output signal from the solid-state image pickup device; and

an endoscopic function adjusting circuit comprising a function modifying circuit, connected to the general-purpose video processing circuit, for modifying at least one of the drive signal processing function and the signal processing function executed by the general-purpose video signal processing circuit in accordance with the endoscope having the solid-state image pickup device therein;

wherein the endoscopic function adjusting circuit comprises an adjusting circuit accommodating a variation in the number of pixels, for producing the standard video signal, even when the number of the pixels in the solid-state image pickup device is changed, by storing dummy pixels in a frame memory to compensate for a reduced number of pixels, and by applying a zoom function to produce said standard video signal from said reduced number of pixels.

AMENDED 7. An endoscope apparatus according to [one of Claims 1 and 2] Claim 6, wherein the endoscopic function adjusting circuit has the function of outputting a video signal [of] which produces a still image.

AMENDED 8. [An endoscope apparatus according to one of Claim 1 and 2,] An endoscope apparatus comprising:

a general-purpose video processing circuit having a drive signal generation function for driving a solid-state image pick-up device built into an endoscope and a signal processing function for outputting a standard video signal by processing an output signal from the solid-state image pickup device; and

an endoscopic function adjusting circuit comprising a function modifying circuit, connected to the general-purpose video processing circuit, for modifying at least one of the drive signal processing function and the signal processing function executed by the general-purpose video signal processing circuit in accordance with the endoscope having the solid-state image pickup device therein;

wherein the endoscopic function adjusting circuit has the motorized function of flexing a bending portion of the insert section, interlocked with pan and tilt display functions which compensate for said motorized bending operation.

AMENDED 9. An endoscope apparatus according to one of Claims [1 and 2] 4, 5, 6 and 8, wherein the general-purpose video signal processing circuit and the endoscopic function adjusting circuit [remain unchanged from the respective circuit arrangements thereof when the length of the insert section becomes different] are usable with a plurality of insert sections having different respective lengths and correspondingly different internal delay amounts.

AMENDED 10. An endoscope apparatus according to one of Claims [1 and 2] 4, 5, 6 and 8, wherein the general-purpose video signal processing circuit and the endoscopic function adjusting circuit [remain unchanged from the respective circuit arrangements thereof when the number of pixels in the solid-state image pickup device becomes different] are usable with a plurality of solid-state image pickup having different respective numbers of pixels.

FIG. 1

RED-LINED
COPY

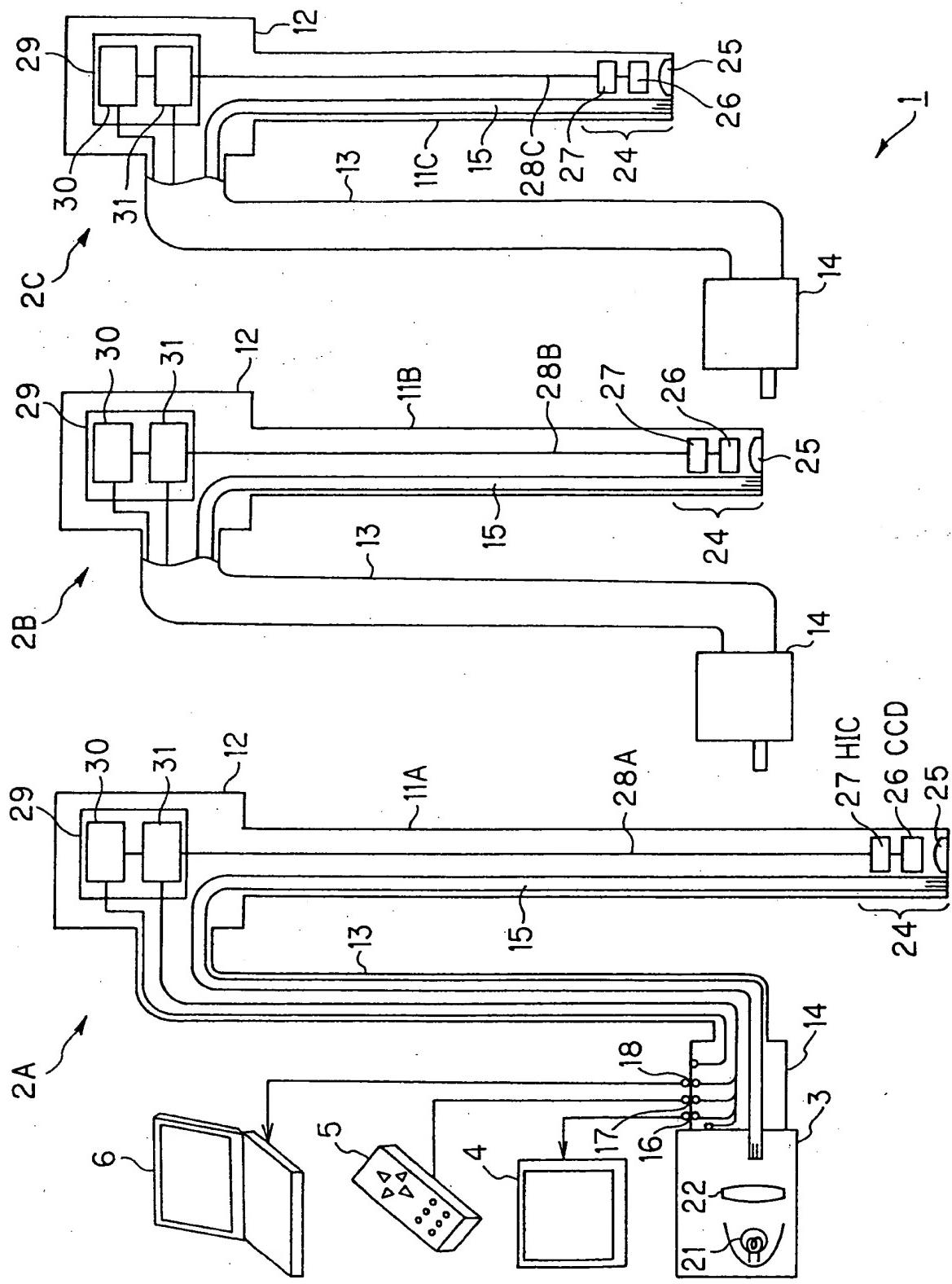
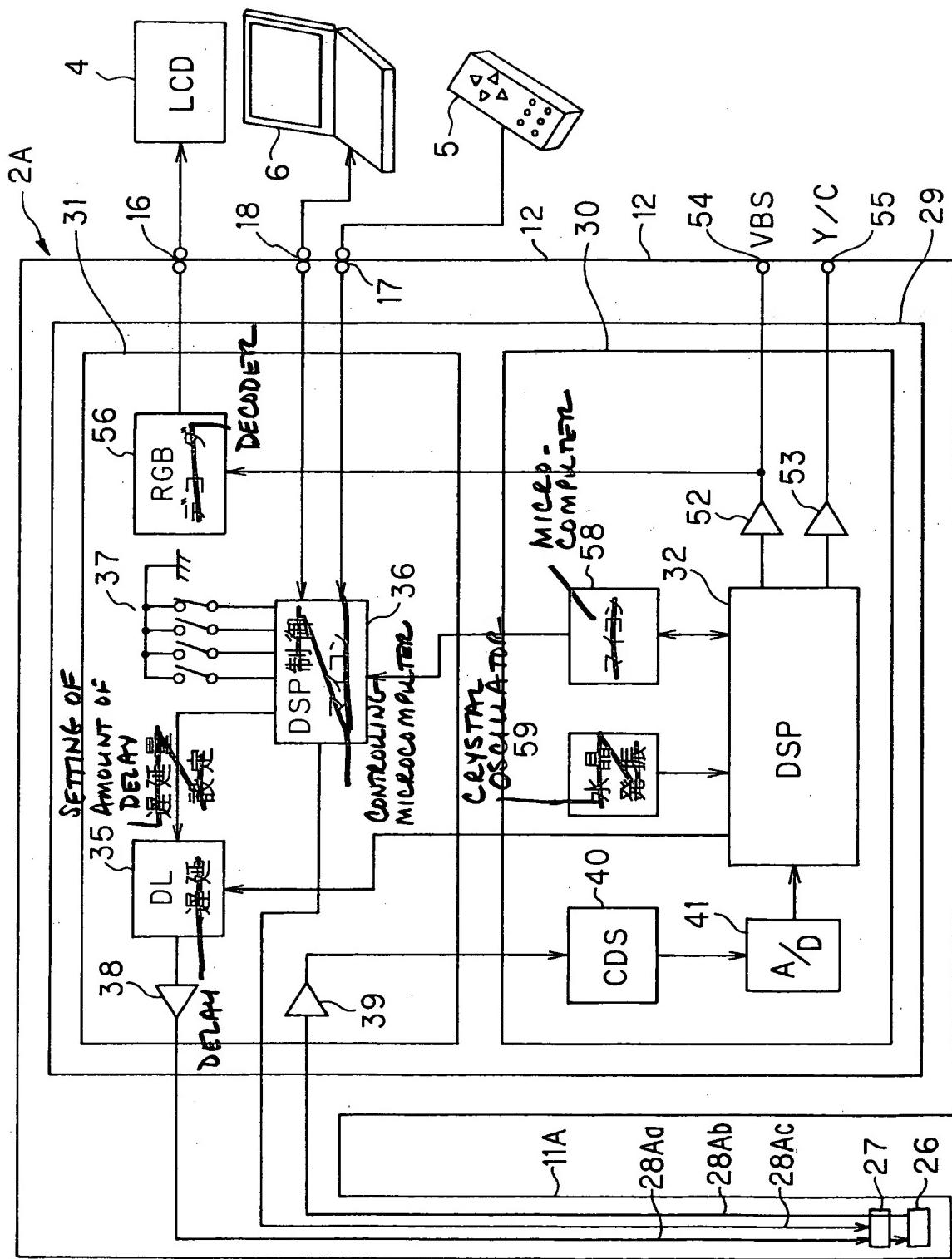


FIG.2



INPUT
EXTERNAL
SYNCHRONIZATION

FIG. 3 SYNCHRONIZATION
REFERENCE OUTPUT FOR
VIDEO SYSTEM
cycle

From EXTERNA
Micro computer

外部同期入力 基本クロック 映像系同期出力 外部マイコン

This block diagram illustrates the architecture of a video signal processing system, likely a VHS recorder. The system is organized into several functional blocks:

- Input:** Y, B-Y, R-Y signals enter the system.
- Drive & Timing:** A **DRIVE** block provides control signals to the **CCD 駆動 & TG** block. The **SSG MODE CONTROL** block generates various timing signals (labeled 33, 34, 43, 46, 47, 48, 49, 51) used throughout the system.
- Color Separation:** The input signals are processed by a **Color Separation / Color Signal Processing** block, which includes a **DIGITAL COLOR CHAMP CIRCUIT** and a **DIGITAL GAMMA SYSTEM**. This stage also receives control signals from the SSG MODE CONTROL.
- Timing System:** A **Timing System** block (labeled 44) receives control signals from the SSG MODE CONTROL and processes them through a **色分離信号処理** (Color Separation Signal Processing) module.
- Digital Processing:** The system features several digital processing modules:
 - A **DIGITAL WHITE CLIPPING** module (labeled 50) receives signals from the Timing System and the Color Separation block.
 - A **DIGITAL ENHANCEMENT** module (labeled 50) receives signals from the Color Separation block and the DIGITAL WHITE CLIPPING module.
 - A **DIGITAL ZOOM PROCESSING** module (labeled 47c) receives signals from the DIGITAL ENHANCEMENT module.
 - A **DIGITAL COLOR PROCESSING** module (labeled 47b) receives signals from the DIGITAL ZOOM PROCESSING module.
 - A **DIGITAL COLOR PROCESSING** module (labeled 47a) receives signals from the DIGITAL COLOR PROCESSING module and the Timing System.
- Output:** The final output consists of three color signals (Y, C, B-Y) and a **VBS** signal, all sent to a **Digital Encoder** (labeled 51).
- Control:** The **Microcomputer INTERFACE** (labeled 32) manages the entire system via the **MODE SETTING OUTPUT**.

FIG.4

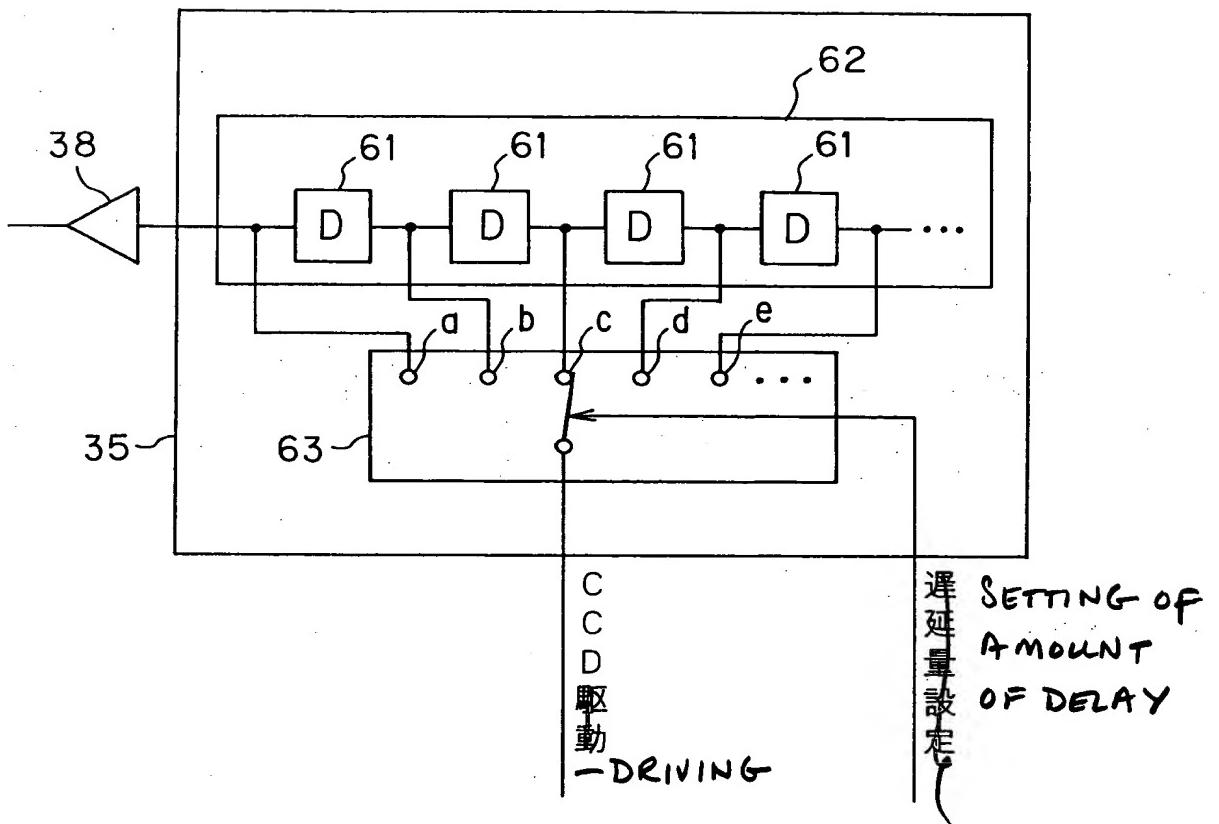


FIG.5

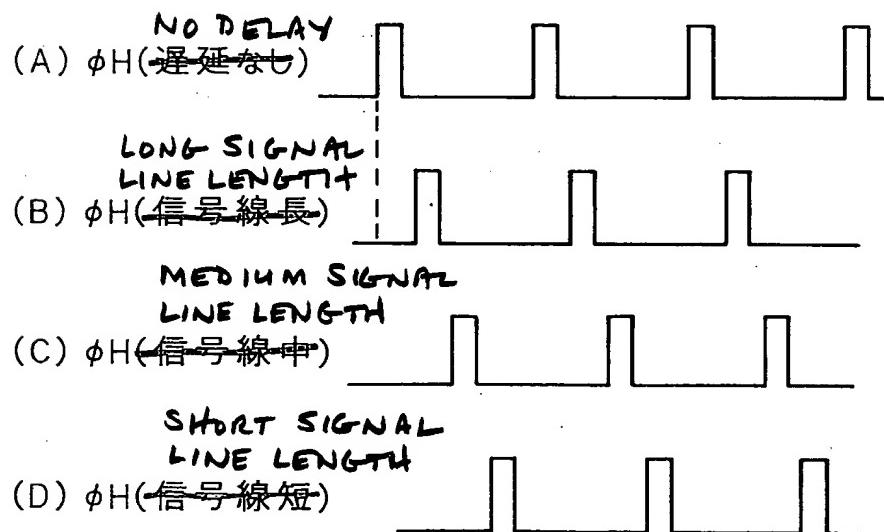


FIG.6

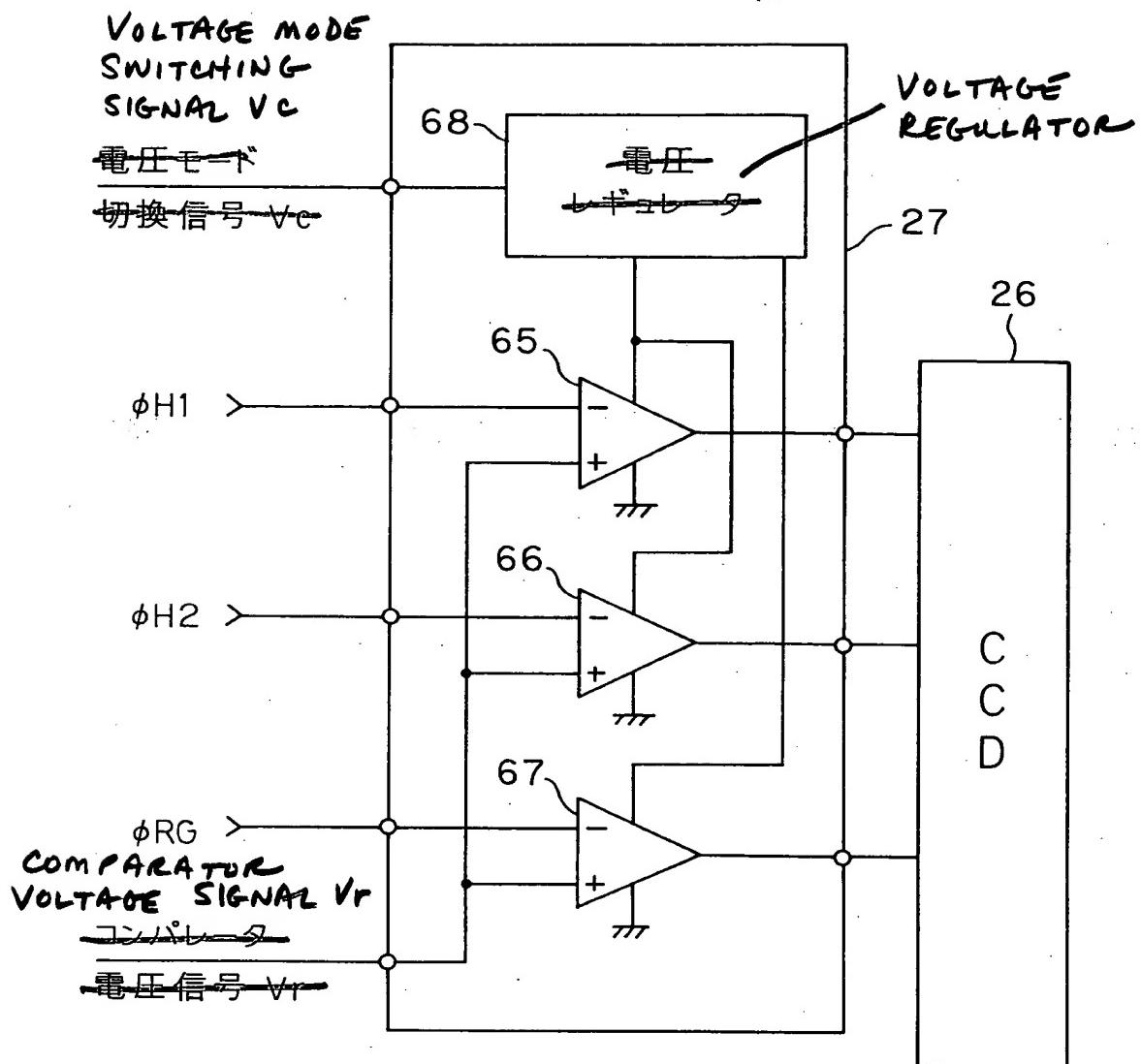


FIG.7

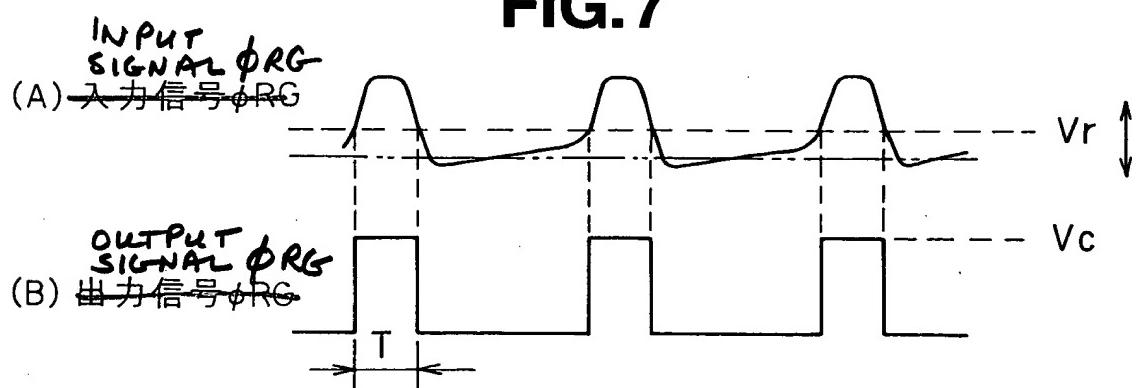


FIG.8

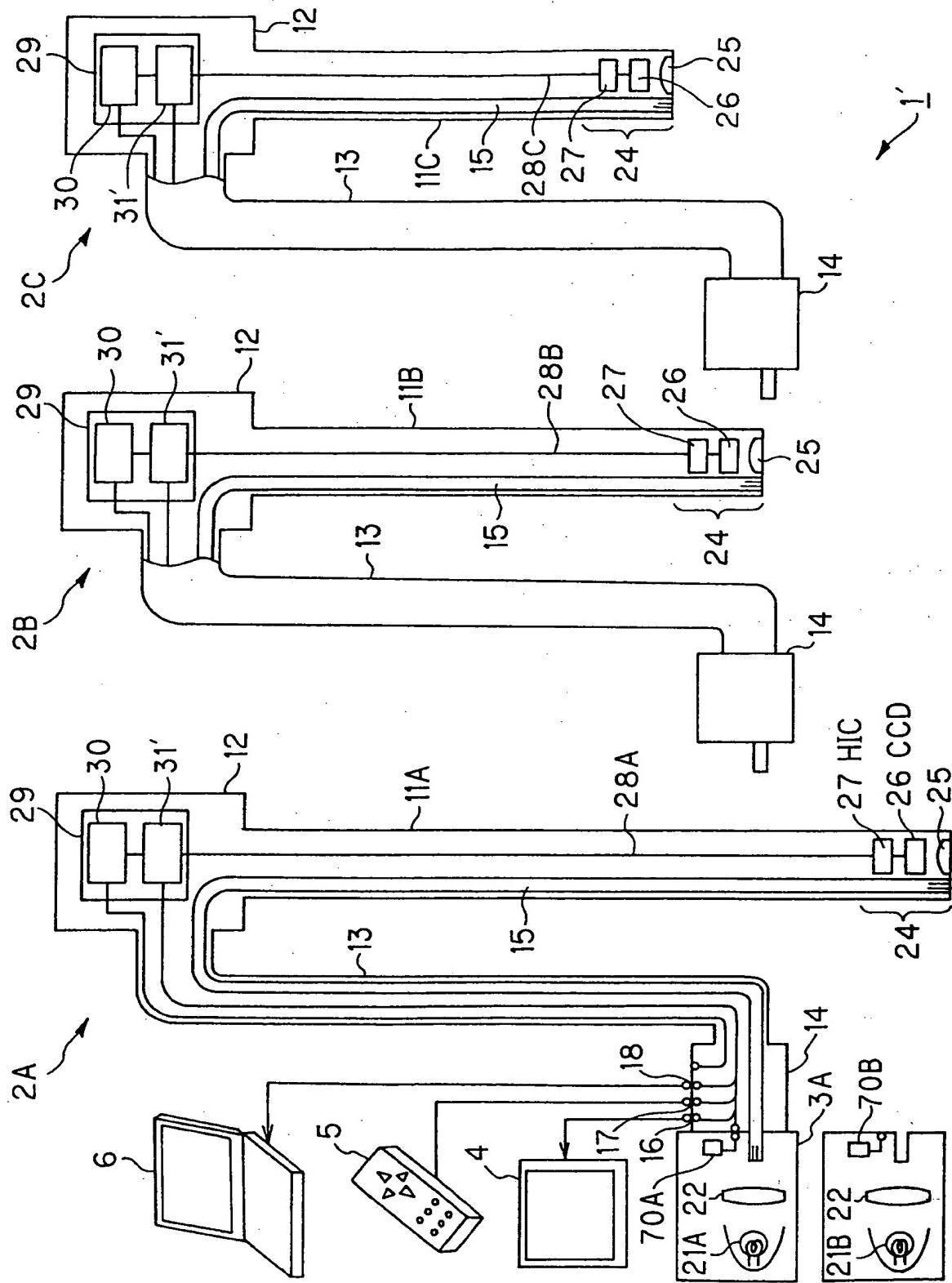


FIG.9 DIP SWITCH

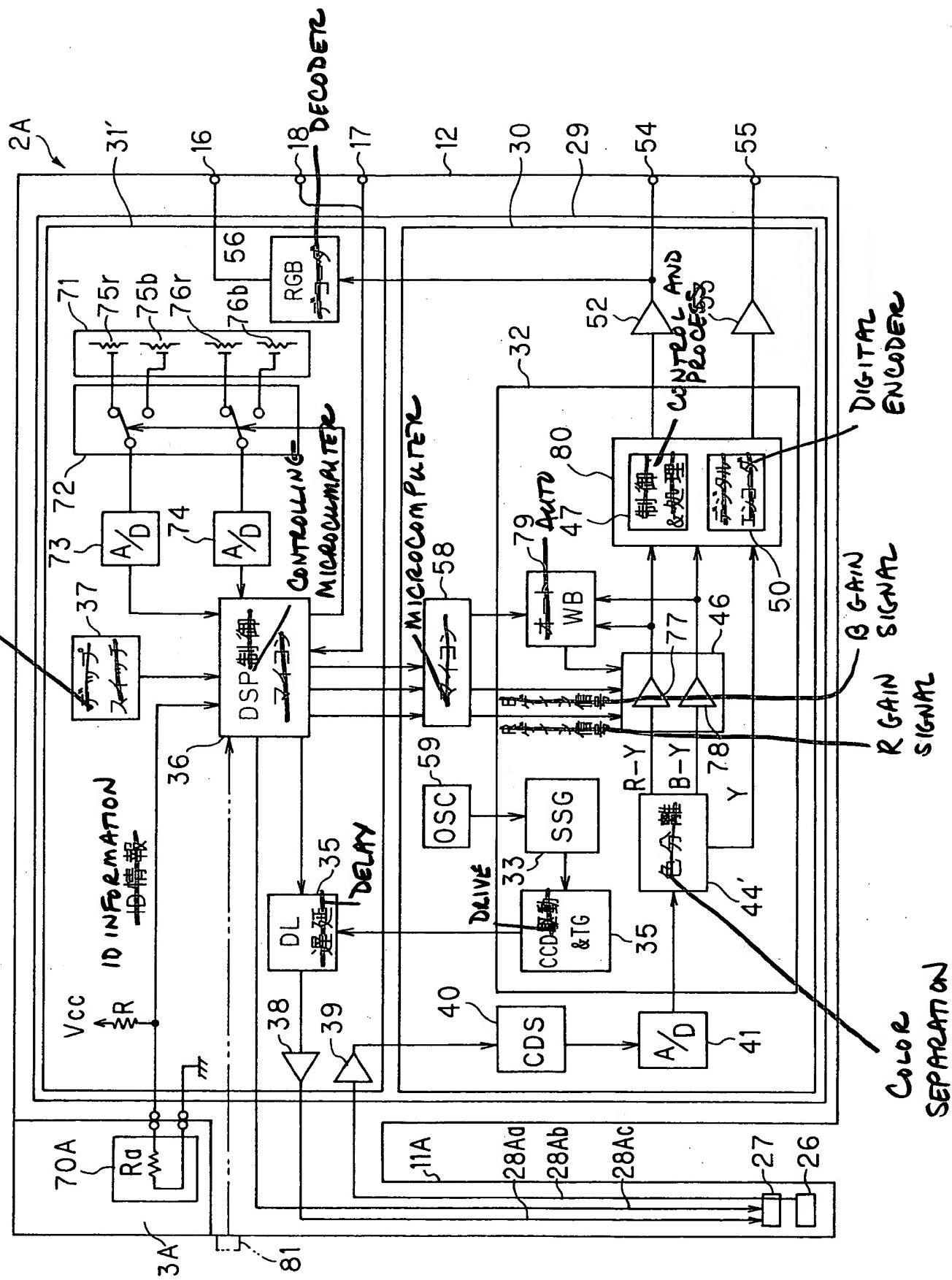


FIG.10

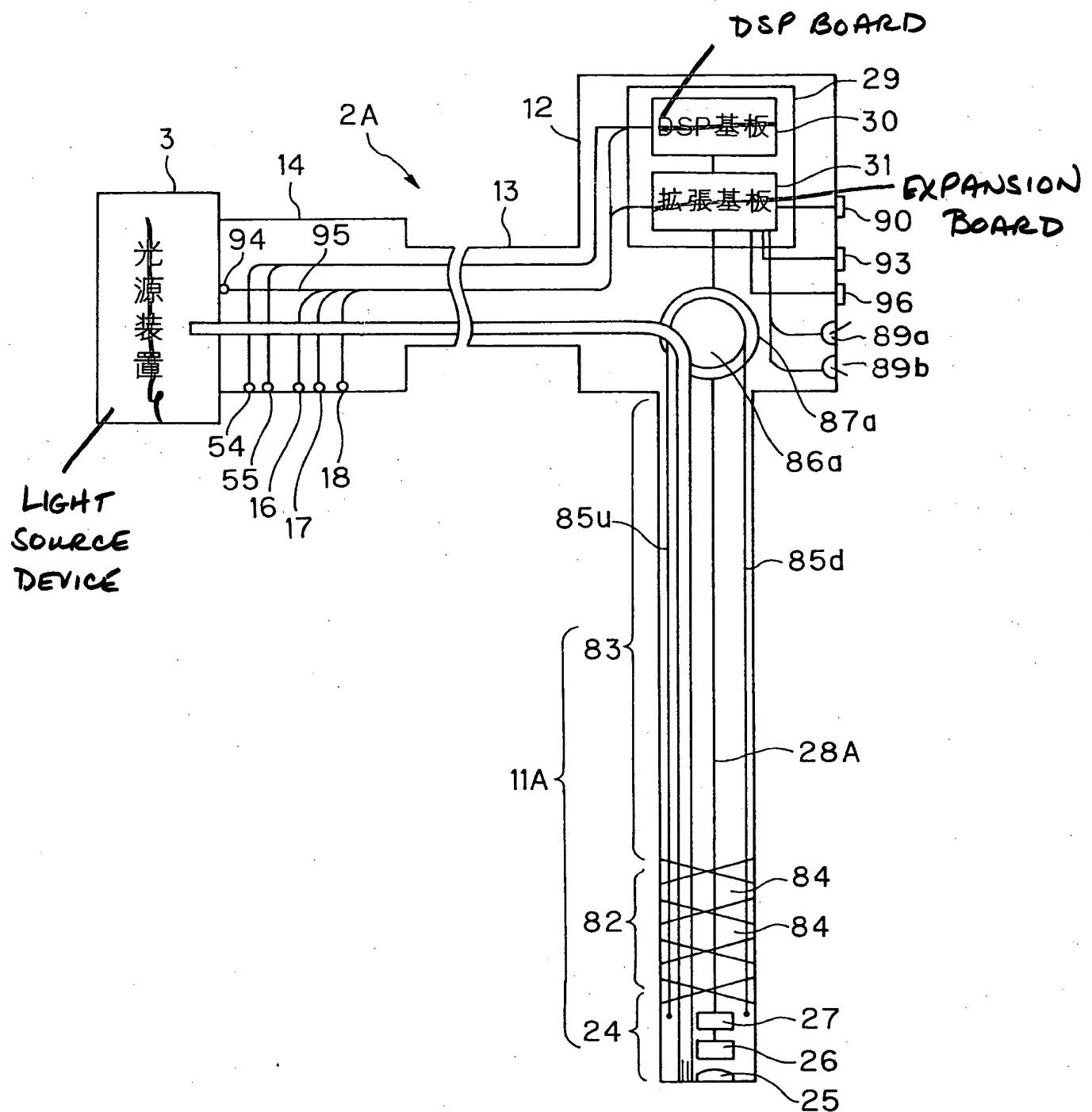


FIG. 11 DIGITAL ZOOM
PROCESS, PAN,
TILT.

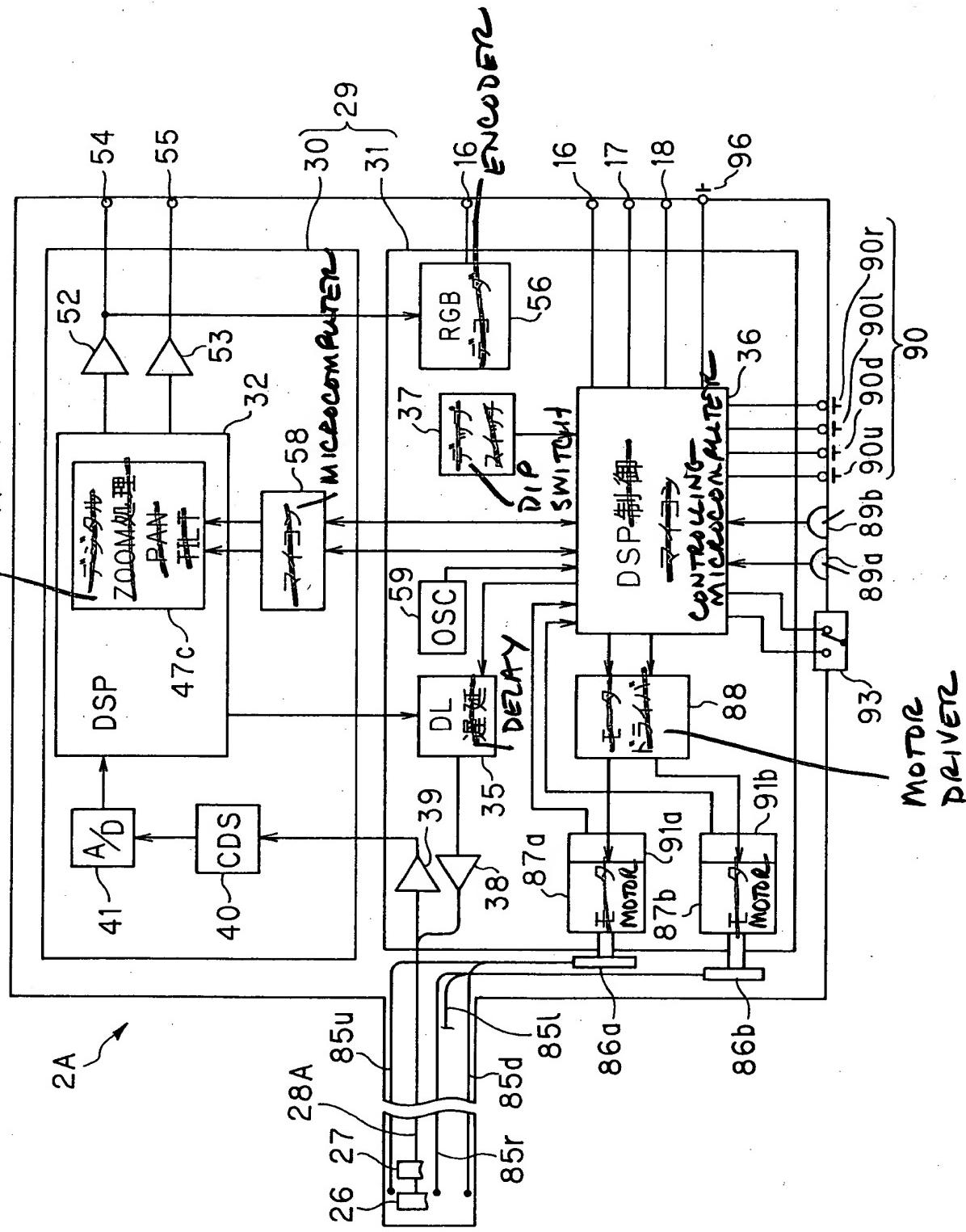


FIG. 12

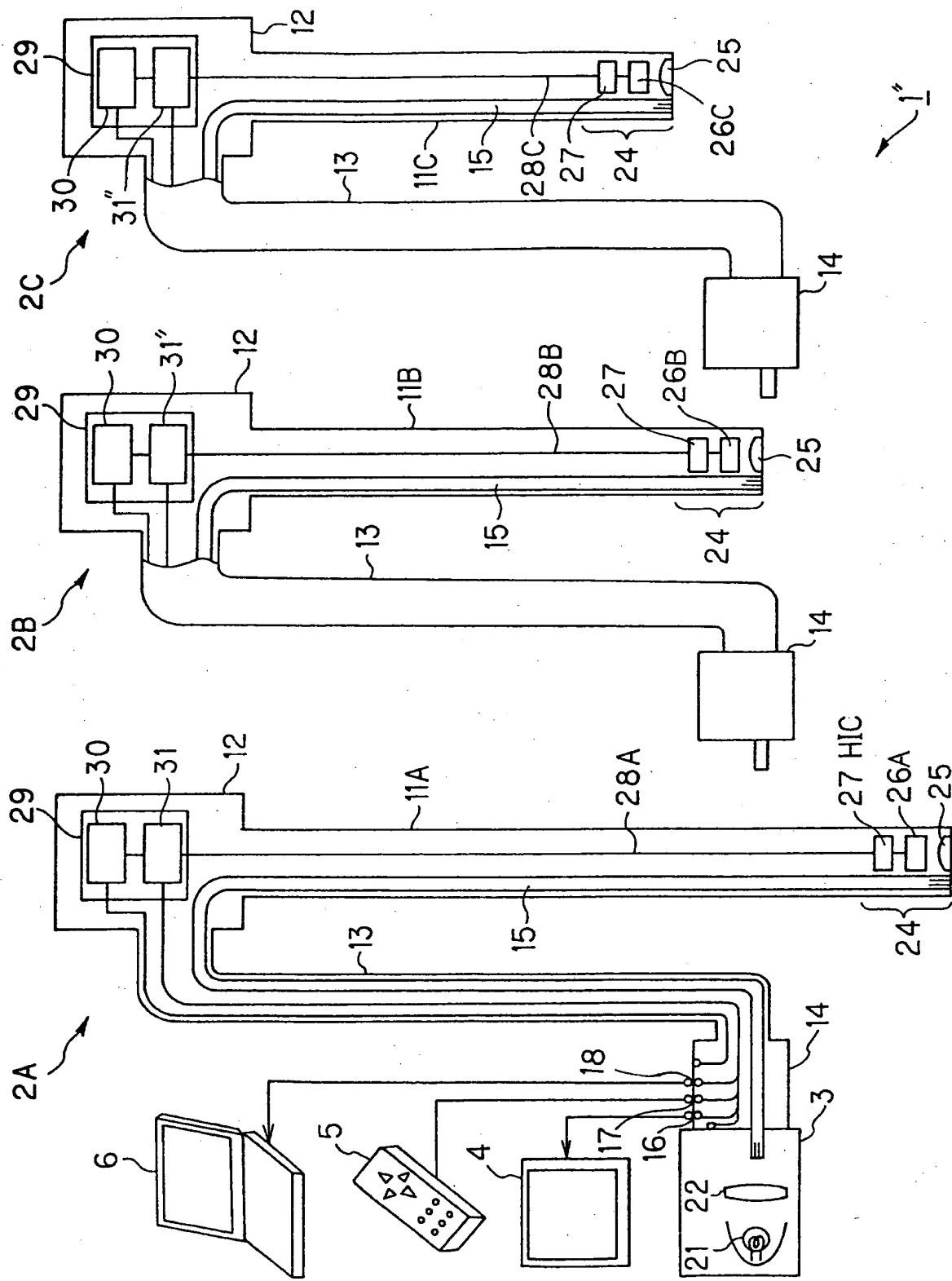


FIG. 13

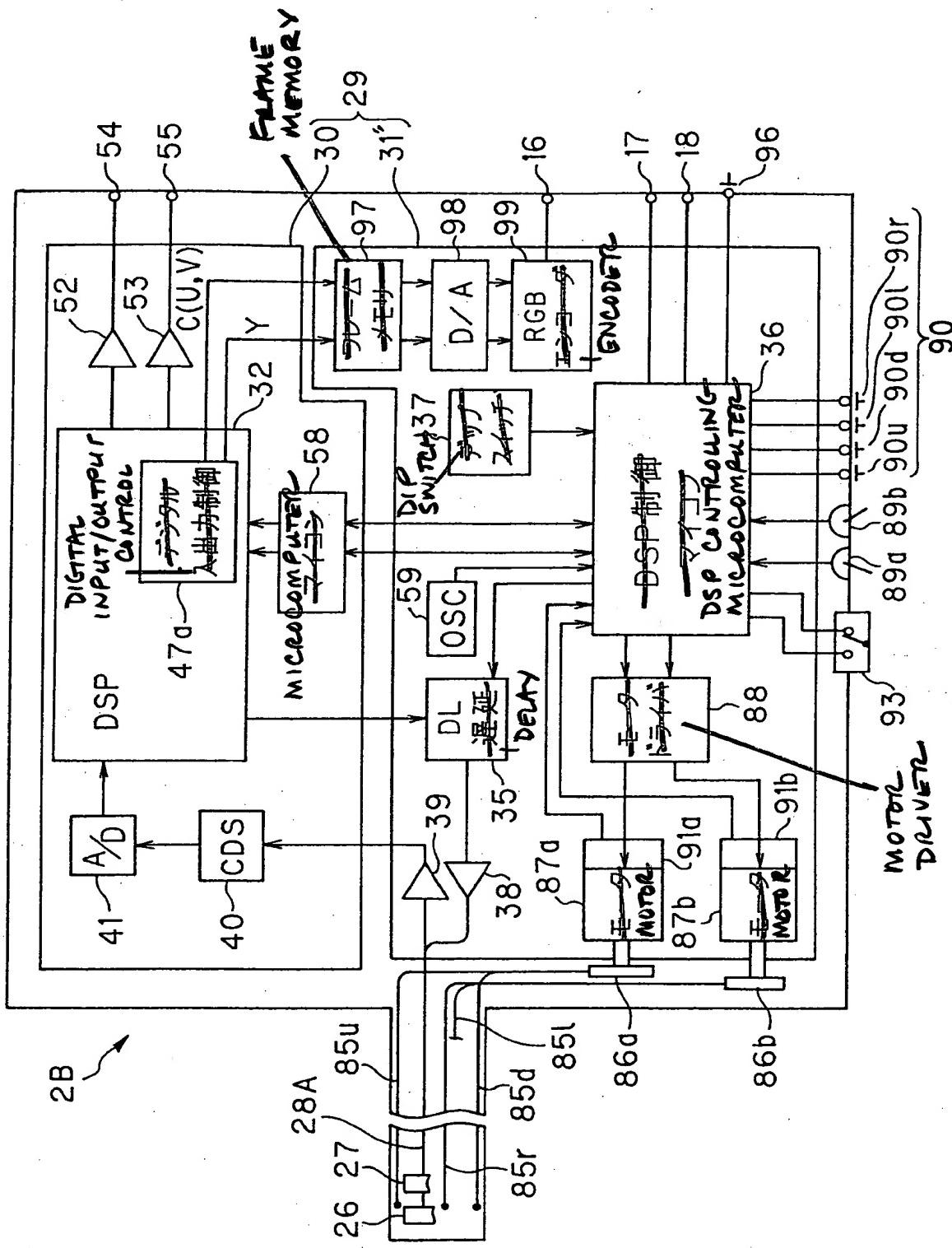


FIG. 14

